

BEST AVAILABLE COPY

BAYER CORPORATION

682095

PROJECT

Silane Aspartate

PROJECT NO.

NAME

C. Gambino

DATE

11-7-96

REFERENCE:

OBJECTIVES:

Prepare Large batch of silane aspartate Pilot Plant batch

NB#682095

Coatings Formulation Data System (v2.0) - Coatings, ICD, Miles Inc.

Silane Aspartate
Methoxyaspartate

Formulation: 10000001.F00

File: C601.F00

#	Raw Material	Eqwt	Percent Solids	Suppl. lb/gal	Solvent lb/gal	%	Conv. %
1	Dynalene 1000	172.19	100	8.81	0.00	0	0.00
2	Silquest A-1110	179.39	100	8.44	0.00	0	0.00

#	Raw Material	Weight	Volume	Weight Solids	Volume Solids	EqV
1	Dynalene 1000	9060.47	1008.47	9060.47	1008.47	52.64
2	Silquest A-1110	9439.57	1118.47	9439.57	1118.47	52.64
3	Total	18500.00	2126.94	18500.00	2126.94	

Weight Solids, %	=	100.00	Weight/gallon	=	0.00
Volume Solids, %	=	100.00	WCC:DM Ratio	=	0.00
W:B Ratio	=	0.00	M Ratio	=	NA
WCC, %	=	0.00	WCC:DM Ratio	=	0.00
			Cost, \$/gal	=	0.00

cps 25°C 9.3 cps

DAL
11-7

Time

Temp

7:30
7:45
9:00
9:15
9:33
9:39
9:48
3:30
3:00

18°C
23.6°C
23.8°C
59°C
65°C
60°C
60°C

Charged reactor with Silane Amine under N₂
Added DEM through addition funnel dropwise
Addition was complete

Started heating to 60°C
Water cooling valve stuck closed

Shifted to cool back down
Shutdown of heating and poured out of reactor
Check viscosity 9.3 cps at 25°C. Sample 40 sec pass

AMP 15.3
Unsaturated # 3188
% Reaction 88.23
Eqwt Theoretical 351.44
Eqwt Measured 366.66
Inhibition # 3.24
% Reaction 90.21

CONCLUSION:

11-8

EXPERIMENTER (signature)

Charles A. Gambino

DATE 11-7-96

READ AND UNDERSTOOD (signature)

DATE

WITNESSED (signature)

DATE

BAYER CORPORATION

682095

PROJECT

Silane Aspartate

PROJECT NO.

NAME

C. Cambiano

DATE

11-7-96

REFERENCE:

OBJECTIVES:

Prepare Large batch of Silane Aspartate Pilot Plant batch

AB#682095
 Coatings Formulation Data System (V2.0) - Coatings, ICD, Miles Inc.

Silane Aspartate
 Methoxyethylane

11-06-1996 Chemist: cag

File: CAG1.FOR

Raw Material

Eqwt	Percent Solids	Suppl lb/gal	Solvent lb/gal	% Cost
172.10	100	8.81	0.00	0 0.00
179.30	100	8.44	0.00	0 0.00

1 Diethylene Glycol
 2 Silquest A-1110

Raw Material

Weight	Volume	Weight Solids	Volume Solids
9060.47	1028.43	9060.47	1028.43
9439.53	1118.43	9439.53	1118.43
18500.00	2146.86	18500.00	2146.86

1 Diethylene Glycol
 2 Silquest A-1110
 3 Total

Weight Solids, %	= 100.00	Weight/gallon	= 8.62
Volume Solids, %	= 100.00	NCO:OH Ratio	= 0.00
P/B Ratio	= 0.00	Mix Ratio	= NA
PVC, %	= 0.00	VOC, lbs/gal	= 0.00
		Cost, \$/gal	= 0.00

cps 25°C 9.3 cps

Date

Time

Temp

1 Diethylmaleate
2 Silquest A-1110
3 Total

9060.47 1028.43 9060.47 1028.43
9439.53 1118.43 9439.53 1118.43
18500.00 2146.86 18500.00 2146.86

Weight Solids, % = 100.00 Weight/gallon = 8.42
Volume Solids, % = 100.00 NCO:OH Ratio = 0.00
P/B Ratio = 0.00 Mix Ratio = NA
PVC, % = 0.00 VOC, lbs/gal = 0.00
Cost, \$/gal = 0.00

CPs 25°C 9.3 cps

DATE	Time	Temp	
1-7	7:30	18°C	Charged reactor with Silane Amine under N ₂
	7:45	23.6°C	Added DEM through addition funnel dropwise.
	9:00	23°C	Addition was complete
	9:15	59°C	Shutted heating to 60°C
	9:33	65°C	Water cooling valve stuck closed
	9:39	60°C	
	9:48	60°C	shutted to cool back down
	3:30	60°C	shut down of heating and poured out of reactor
	3:00		check viscosity 9.3 cps at 25°C sample #40 recaps
			NH # 1513
			Unsaturation # 388
			% Reaction 88.23
			Expt Theoretical 351.44
			Expt Measured 366.66
			Unsaturation # 3.24
			% Reaction 90.21

CONCLUSION:

11-8

PERIMENTER (signature)

Charles A. Hamblin

DATE

11-7-96

READ AND UNDERSTOOD (signature)

DATE

WITNESSED (signature)

DATE

BAYER CORPORATION

PROJECT

Silane Terminated Polyurethane

PROJECT NO.

NAME

K Henderson

DATE

2/6/01

(PRINT)

REFERENCE:

OBJECTIVES:

<u>Materials</u>	<u>EW</u>	<u>Amount</u>	<u>Eg</u>	<u>Eg Ratio</u>
① IPDI	110.91	126.77	1.143	2
② "9100" Polyol Supplied by Kurt Frisch Obtained from New Town Square OH # supplied = 8.75	641.43	366.47	0.571	1
③ XP-7139	366 269.77	269.17	0.571	1
④ T ₁₂ (200 ppm) (dibutyl tin laurate)		.80		
⑤ Vinyl Trimethoxysilane		20.0		

TimeTempRemarks

10 am

20.1

A 5-L flask was charged @
① The polyol was added.
Stirrer & purge added.
80g T₁₂ Turned heat
to 60C

10:30 am

60C

NCO = .65% theoretical 6337

1 pm

60C

Added XP-7139

4:30 pm

60C

No NCO Remains per
React IR

added 20g vinyl
trimethoxysilane to
stabilize stir ~ 20 min
Pour 95. Deliver to
D Crawford

CONCLUSION:

VISC @ 25C 16,100 CPS

Sent for GPC

% water = 0.009

Delivered to Derek Crawford

EXPERIMENTER (signature)

Karen Henderson

DATE

2/6/01

READ AND UNDERSTOOD (signature)

Richard Roach

DATE

2/8/01

WITNESSED (signature)

BEST AVAILABLE COPY**Desmophen XP 7139E**

* - Required Entry for Requester

** - Required Entry for Prod Mgr (Approver)

Current Assignee:	File
Current Status:	Active XP Products

Doc Author:	Phil Lunney
Request Date:	06/09/2000
Date XP# Established:	12/17/97
* Business Development Group:	Construction Materials
* Notebook #'s:	682095

Product Information

Name:	Desmophen XP 7139E
XP Product Number:	7139E
**Product Code:	xx029580
* Product Family:	Resins HGR - 803
* Description:	Silane functional Aspartate
**Restricted to:	
Product Status:	Other
Link to ETL MSDS's:	

Typical Properties

* Eq. Weight =	351.4	to grams/equivalent
Viscosity =	10	to cps@ 25 °C
% Solids =	100%	to %
* Density =		to lbs/gal@ °C
or		to g/ml@ °C
* Flash Point =	°C,	Method
	°F	
Physical Form =		
NCO =	%	to %
Blocked NCO =	%	to %
% OH =		to
OH# =		to
Amine# =		to

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Acid# =	
pH =	
Color, APHA =	maximum
Turbidity =	max.
%Water =	% Max.

Key Personnel

*Product Manager:	Heidi Ali/PITTS/PPD/US/BAYER
Product Steward:	Pete Schmitt/PITTS/PPD/US/BAYER
Research:	Richard Roesler/PITTS/PPD/US/BAYER
Technical:	Poli Yu/PITTS/PPD/US/BAYER

Marketing Information

* Background of the Development:	In-process intermediate for the preparation of silane functional polyurea/hydantoin
* Targeted Application Areas:	auto, industrial, maintenance
* Features/Benefits:	useful to incorporate moisture curing capability into polyurea
* TSCA Status:	PMN filed
** EINECS Status:	
DSL/NDL Status:	
* Secrecy Agreements:	
Patent Situation:	
** Competitive Products:	

Management Information

** Potential Volumes: (thousand's of lbs)	
** Recommended List Price (\$/lb)	
** Margin-2(%):	
** Manufacturing Price(\$/lb):	
** Capital Investment: (thousand's of \$)	

Production Formula**NOTICE:**

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The formulation and technical information included in this database are subject to the terms set forth in the License Agreement of July 29/October 4, 1985 between Bayer Corp. and Bayer AG.

* Research Contact for Formulation: Richard Roesler/PITTS/PPD/US/BAYER : |

* **Production Formula:**

[illegible]

Comments:	Must be aged at least two weeks before use.
Commercial Name:	
Attachments:	

Edit History: